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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,113	12/01/2003	Moshe Finarov	FINAROV=3A	9921

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EXAMINER

PUNNOOSE, ROY M

ART UNIT	PAPER NUMBER
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2886

MAIL DATE	DELIVERY MODE
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05/25/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/724,113

Applicant(s)

FINAROV ET AL.

Examiner

Roy M. Punnoose

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-96 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,90,91,95 and 96 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 2-89 and 92-94 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/2003; 03/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Election

1. The election of claims 1-4, 6, 8-19 and 21-96 filed by the applicant on November 29, 2006 in response to the previous office action is acknowledged and has been entered into the records.

2. Applicant's election of claims 1-4, 6, 8-19 and 21-96 81-84 is non-compliant and improper because elected claims 81-84 are dependent on a non-elected claim, claim 20.

3. Further, applicant's election of claims 1-4, 6, 8-19 and 21-96 is non-compliant and improper for the following reasons:

Group I. Claims 1-91 and 95-96 are directed to a measurement system and method for determining the parameters of a structure, classified in class 356 and subclass 625.

Group II. Claims 92-94 are directed to a method for fabricating a semiconductor device, classified in class 438 and subclass 16.

The inventions are distinct, each from the other because of the following reasons:

Inventions of Group I and Group II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the semiconductor device can be fabricated using other systems and methods.

4. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the

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inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

6. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

7. If claims of Group I is elected, then the following applies:

- a. Claim 1, 2, 90-91 and 95-96 forms species 1;
- b. Claims 1 and 3 forms species 2;
- c. Claim 1 and 4 forms species 3;

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- d. Claims 1 and 5 forms species 4;
- e. Claims 1 and 6 forms species 5;
- f. Claims 1 and 7 forms species 6;
- g. Claims 1 and 8 forms species 7;
- h. Claims 1 and 9 forms species 8;
- i. Claims 1 and 10 forms species 9;
- j. Claims 1 and 11 forms species 10;
- k. Claims 1 and 12 forms species 11;
- l. Claims 1 and 13 forms species 12;
- m. Claims 1 and 14 forms species 13;
- n. Claims 1 and 15 forms species 14;
- o. Claims 1 and 16 forms species 15;
- p. Claims 1 and 17 forms species 16;
- q. Claims 1 and 18 forms species 17;
- r. Claims 1 and 19 forms species 18;
- s. Claims 1, 20 and 81-84 forms species 19;
- t. Claims 1 and 21 forms species 20;
- u. Claims 1 and 22 forms species 21;
- v. Claims 1 and 23 forms species 22;
- w. Claims 1 and 24 forms species 23;
- x. Claims 1 and 25 forms species 24;
- y. Claims 1 and 26 forms species 25;

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- z. Claims 1 and 27 forms species 26;
- aa. Claims 1 and 28 forms species 27;
- bb. Claims 1 and 29 forms species 28;
- cc. Claims 1 and 30 forms species 29;
- dd. Claims 1 and 31 forms species 30;
- ee. Claims 1 and 32 forms species 31;
- ff. Claims 1 and 33 forms species 32;
- gg. Claim 1 and 34 forms species 33;
- hh. Claims 1 and 35 forms species 34;
- ii. Claim 1 and 36 forms species 35;
- jj. Claims 1 and 37 forms species 36;
- kk. Claims 1 and 38 forms species 37;
- ll. Claims 1 and 39 forms species 38;
- mm. Claims 1 and 40 forms species 39;
- nn. Claims 1 and 41-49 forms species 40;
- oo. Claims 1 and 51-56 forms species 41;
- pp. Claims 1 and 57 forms species 42;
- qq. Claims 1 and 58-60 forms species 43;
- rr. Claims 1 and 61-65 forms species 44;
- ss. Claims 1 and 66-76 forms species 45;
- tt. Claims 1 and 77 forms species 46;
- uu. Claims 1 and 78-80 forms species 47; and,

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vv. Claims 1 and 85-89 forms species 48.

The species are independent or distinct because each of the above embodiments has a unique type and set of features for measuring parameters of a structure under test.

8. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

9. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 90 appears to be generic because it encompasses limitations that are common to all the various embodiments of the claimed invention(s).

10. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

11. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

12. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

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13. The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103 (a) of the other invention. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

14. The information disclosure statement filed on 12/01/2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. Some of the documents are missing. Please refer to the signed and initialed PTO-1449 included herewith.

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15. As a matter of courtesy and to expedite the processing of this application more efficiently, the Examiner has done a preliminary examination to give the applicant an opportunity to amend any claim(s) to overcome prior art teachings.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 1, 90-91 and 95-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nikoonahad et al (US_6,633,831 B2).

18. Claim 1 is rejected because:

A. Nikoonahad et al (Nikoonahad hereinafter) teaches of a measurement system comprising: a stage 42 configured to support the structure 40 during measurements, an illumination system 36 configured to direct incident light toward a surface of the structure 40 during measurements; and a detection system 38 coupled to the illumination system 36 and configured to detect light propagating from the surface of the structure during measurements, wherein the measuring unit is configured to generate one or more output signals in response to the detected light during measurements, and a processor 54 coupled to the measuring unit and configured to determine the parameters of the structure 40 from said one or more output signals during measurements, wherein said parameters comprise a critical dimension (see abstract and Figure 3) of the structure and a layer characteristic of the structure, to determine parameters of the structure.

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- B. However Nikoonahad does not explicitly teach that the measuring unit is coupled to the stage in the measuring system to determine parameters of the structure.
 - C. The Examiner takes official notice that coupling the stage to the measuring system is well known in the art in systems used for determining parameters of the structure.
 - D. In view of what is well known in the art, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate coupling a stage to the measurement system into Nikoonahad's system due to the fact that the position of a structure to be adjusted in real-time in response to measurement made, so that the accuracy of the measurement system can be improved.
19. Claims 90-91 and 95-96 are rejected for the same reasons of rejection of claim 1 above because they are directed to methods of implementing the system of claim 1.
20. Claims 2-89 have not been examined pending the election of claims Group I or II and any applicable species.

Contact/Status Information

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Roy M. Punnoose** whose telephone number is **571-272-2427**.

The examiner can normally be reached on 9:00 AM - 5:30 PM.

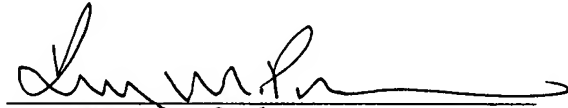
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Tarifur Chowdhury** can be reached on **571-272-2287**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 01, 2007

A handwritten signature in black ink, appearing to read 'Roy M. Punnoose', written over a horizontal line.

Roy M. Punnoose

Patent Examiner

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